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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,793	07/10/2003	Nina Taft	2313/SPRI.104288	1975
32423 7590 05/31/2007 SPRINT COMMUNICATIONS COMPANY L.P. 6391 SPRINT PARKWAY KSOPHT0101-Z2100 OVERLAND PARK, KS 66251-2100			EXAMINER PHAN, TRI H	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 05/31/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/616,793	TAFT ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tri H. Phan	2616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-14 is/are allowed.
- 6) ☐ Claim(s) 1-3 and 15-21 is/are rejected.
- 7) ☐ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status***

1. This Office Action is in response to the communication(s) filed on July 10<sup>th</sup>, 2003.  
Claims 1-21 are now pending in the application.

### ***Drawings***

2. The drawings are objected to because all blocks in Figures 1-2 should be labeled with descriptive legends based on 37 C.F.R. § 1.84(o) for supporting the objection in the Rules and M.P.E.P. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claim 9 is objected to because of the following informalities:  
  
In claim 9, line 7, the word "ink" after the term "intra-PoP" is a typographical error; it should be correct to -- link --.  
  
Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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4. Claims 15-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 15-21 are drawn to functional descriptive material NOT claimed as residing on a computer readable medium. MPEP 2106.IV.B.1(a).

As recited in claims 15 and 19, while defining “*A machine readable media containing machine readable code for causing ...to perform a method for routing ...*”, does not define a “computer-readable medium” and is thus non-statutory for that reasons. “In contrast, a claimed computer-readable medium encoded with the data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.”  
- MPEP 2106.IV.B.1(a).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hsu, Ivy P.** (U.S.6,363,319; hereinafter refer as ‘**Hsu**’).

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- In regard to claim 1, **Hsu** discloses, *a method for routing a packet ultimately intended for a destination made in an IP network by a receiving node* (for example see figs. 1A-C; Abstract), *wherein all links between nodes have an assigned weight ('cost metric'; for example see col. 5, lines 44-46), wherein the cost of a route is the sum of the weight of all links on that route ('total cost'; for example see col. 11, lines 7-9, 32-34), and wherein the shortest route path between the receiving node and the destination node is the route that has the lowest possible cost designated C* (for example see col. 1, lines 50-57; col. 5, lines 44-55), *the method comprises*

*determining whether the next link of the shortest route path from the receiving node to the destination node is congested* (for example see col. 7, lines 45-55); *and*

*if the next link of the shortest route path from the receiving node to the destination node is congested:*

*identifying at least one node adjacent to the receiving node with a shortest route path between the adjacent node and the destination node having a cost less than C* (for example see col. 7, lines 45-55);

*determining if the link between the receiving node and each of the at least one identified adjacent nodes is congested* (for example see col. 7, lines 45-55; col. 10, lines 10-20, 49-62; col. 11, lines 22-35); *and*

*routing the packet to one of the at least one node if the link between the receiving node and the one of the at least one identified adjacent node is not congested* (for example see col. 7, lines 45-55).

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- Regarding claim 2, **Hsu** further discloses, *wherein determining whether a link is congested comprises determining whether traffic on that link exceeds a predetermined fraction of the capacity of the link* (for example see col. 7, lines 45-55; col. 10, lines 10-20, 49-62; col. 11, lines 22-35).

- In regard to claim 3, **Hsu** does disclose about the threshold value (for example see col. 9, lines 42-60; col. 10, lines 10-20); but fails to disclose, wherein the predetermined fraction of the capacity of the link comprises “*one-half*”. However, it is obvious that the predetermination value of the capacity fraction of the link is “*one-half*” is just the choice(s) of system engineering.

Therefore, it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to predetermine the capacity fraction of the link is “*one-half*” as system engineering choice(s).

#### ***Allowable Subject Matter***

7. Claims 15-21 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 101, set forth in this Office action.

8. Claims 5-14 are allowed. The following is a statement of reasons for the indication of allowable subject matter:

Substantially regarding claim 5, the prior art of record fails to disclose the method for routing a packet for a destination node in an IP network, by comparing the value of the minimum

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weight of an inter-PoP link is designated  $W_{min}$ , wherein the maximum weight of an intra-PoP link is designated  $W_{max}$ , wherein  $W_{min} > W_{max}$ , and by identifying at least one node adjacent to the receiving node with a shortest route path between the adjacent node and the destination node not greater than  $C + W_{max}$  and with a cost between the at least one adjacent node and the receiving node less than  $W_{max}$ .

Substantially regarding claim 9, the prior art of record also fails to disclose the method for routing a packet for a destination node in an IP network, wherein the determination of the identified adjacent nodes has a shortest route path between that adjacent node and the destination node with a cost less than  $C - W_{max}$  and, if not determining if one of the identified adjacent nodes has a cost no more than  $W_{max}$  from the receiving node; and has the shortest route path between that adjacent node and the destination node with a cost no greater than  $C + W_{max}$

Substantially regarding claim 12, the prior art of record further fails to disclose the method for routing a packet for a destination node in an IP network, wherein the determination of the identified adjacent routers has the shortest route path between that adjacent router and the destination router with a cost less than  $C - (n-1) W_{max}$  and, if not determining if one of the identified adjacent routers has a cost no more than  $W_{max}$  from the receiving router; and has a shortest route path between the receiving router and the destination router with a cost no greater than  $C + W_{max}$ .

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Iwata, Atsushi** (U.S.5,933,425), **Masuo et al.** (U.S.6,154,444) and **Coan et al.** (U.S.5,093,824) are all cited to show devices and methods for improving the routing of packets to satisfy the QoS and dynamic change(s) of network resource in telecommunication architectures, which are considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179.

**Any response to this action should be mailed to:**

**Commissioner of Patents and Trademarks**

Washington, D.C. 20231

**or faxed to:**

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**(571) 273-8300**

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tri H. Phan  
May 29, 2007

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER

5/29/07